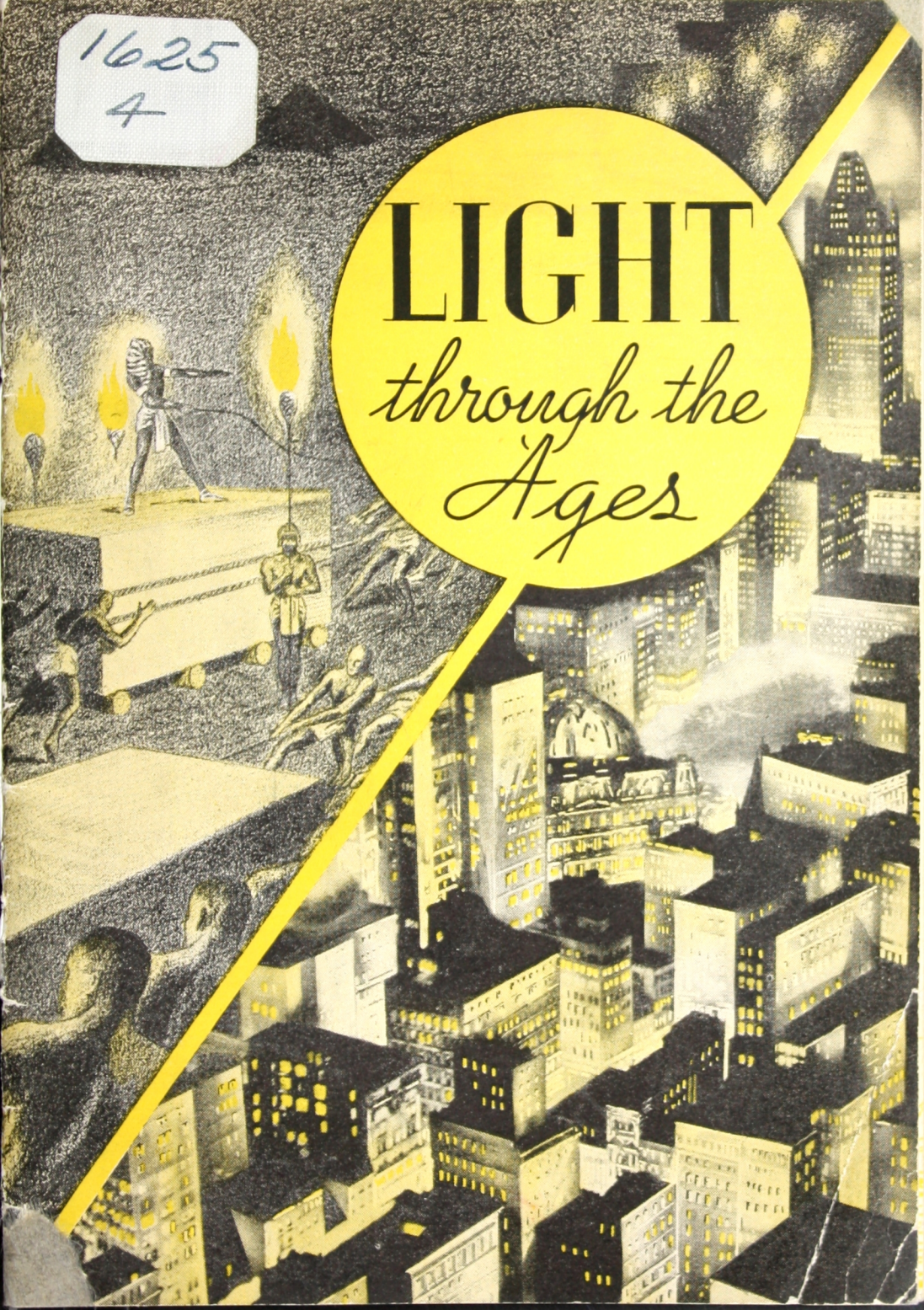


1625

4

LIGHT

*through the
Ages*





THE COLOSSUS OF RHODES

A BRONZE statue of the sun-god Helios, symbol of light, made by Chares of the spoils left by Demetrius Poliorcetes after his siege of the city of Rhodes.

It took 12 years to build, stood 70 cubits, or approximately 115 feet high; was one of the first lighthouses in the world. Although commonly believed to have stood astride the harbor, it undoubtedly was situated on the shore at the entrance. It was destroyed by an earthquake about 224 B.C., lying broken for nearly 1,000 years, when the pieces were sold probably to be reconverted into instruments of war.



LIGHT

THROUGH THE AGES

THE HISTORY
OF THE PROGRESS OF LIGHTING
SINCE THE EARLIEST TIMES

FROM A STUDY MADE BY JAMES D. LEE, JR.

OF THE STAFF

THE FRANKLIN INSTITUTE MUSEUM OF PHILADELPHIA

© 1935
WESTINGHOUSE LAMP CO.

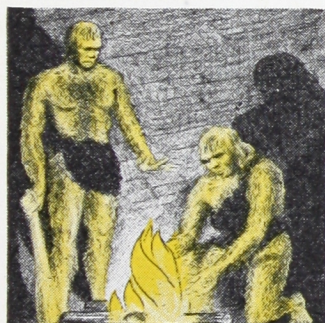
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LIGHT IN ANTIQUITY

DARKNESS. The animal called Man gritted his teeth and peered fearfully through the gathering dusk. Darkness . . . and danger!

Denizens of the jungle crept stealthily through the deepening shadows, keen senses telling them of the nearness of Man. A sudden leap . . . a surprised struggle . . . and it was over. Man was helpless in the fearful darkness of night.

Thunder rolled and lightning crashed, splitting the forests asunder. A tongue of flame shot up, fathered by the lightning,



mothered by the wind and fed with the dry tinder of ancient verdure. The ebony heavens of a moonless night blurred and paled. Fingers of flame painted the heavens a sallow yellow. Yellow upon yellow, until a swirling canopy of vivid color covered the world. Man stood on the precipice, blinking at the new land of light below. Vision in the darkness! Thus man learned of fire. Fire made heat . . . and a strange light that pierced the dark shadows.

From the smouldering inferno that once had been a forest, one man, braver than the

rest, salvaged glowing embers with which to build his own fire before his primitive cave-dwelling. The new flames flickered merrily and man stood gaping in awed wonder.

From that day forward, firelight challenged the darkness of night. Four-legged jungle beasts stared in amazement and fear. Stealthily they circled Man and his Light . . . but dared not enter the magic circle of vision. No longer was man afraid. He had conquered death in the darkness. He was the new master of the world! His was the power of Light!





ANCIENT EGYPT

THE LANGUID Nile drifts silently through the black Egyptian night. Close by, another wavering stream of flickering light winds its way. Glistening Nubians, weighted with baskets of choice foods and jewels, pick their way over the sandy desert to a darkened hole in the side of a pyramid.

Gradually the serpentine procession is swallowed by the gaping portals of the Home of the Dead. The eerie stream of light grows shorter, flickers and dies.

Deep in the heart of the pyramid a strange group stands in respectful silence around the painted walls of a massive chamber. In the center lies an ornate mummy-case. Light from the torches held by Nubian slaves etch strange designs on the carved box.

It is the funeral procession of an Egyptian Pharaoh. His last resting place in the heart of the pyramid he built is filled with his earthly riches . . . his sacred possessions even in death. A high priest of Isis, queen of the gods, intones the sacred phrases that give everlasting life. Slaves in the background hold their oil-dipped torches high. The linen strips wrapped in a ball around the tip of the torches crumble and rain hot sparks on the quivering dark skins of the Nubians.

Slowly the sad procession wends its way out into the darkness. Back along the silent Nile it creeps, to be shrouded once again by the black Egyptian night.

EGYPTIAN TORCH

A metal rod or stick with a ball of oil-soaked rags or reeds wrapped around the end. Either vegetable or animal oil was used as an illuminant. These torches were carried only in processions.



GOLDEN GREECE

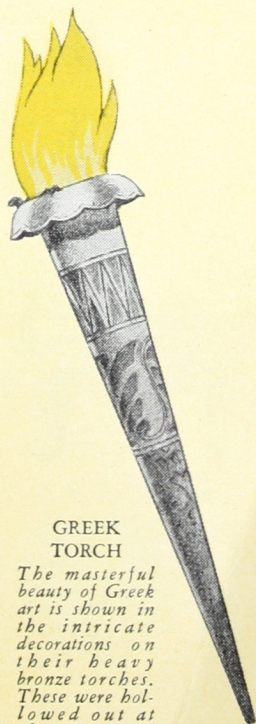
VICTORY! The Persian horde no longer threatens fair Athens! Alone and unaided she had, that morning, driven Darius' men from the plains at Marathon. Hail! Miltiades! Hero of Athens!

Athenian warriors gather around the festive board to celebrate the day. Rich foods on golden platters. Riches beyond compare! Athens can *never* be conquered! . . . but deep in their hearts they know it is not ended. The Persians would return . . . but tonight is the night for the men of Athens!

Dripping bronze torches fastened to the walls glow cheerfully in the fading light. Slaves light new torches with their vestas, the ancient father of the match. A merry round of singing and dancing . . . food . . . and more wine! The banquet becomes a pandemonium of joyful celebration. The hour grows late. The music softens and dies. The torches flicker and are lost in the breaking dawn.

A new day spreads its early light over the quiet banquet hall. The torches are black fingers, pointing to the heavens.

Victory for Athens, while torn fragments of a mighty army stumble home to Persia, to build again a threat to the peace of golden Greece. The bronze lamps in the pastel-hued temples of the Acropolis shine on for the glory of Greece, their light a feeble flicker that grows brighter, more revealing, with the years.



GREEK
TORCH

The masterful beauty of Greek art is shown in the intricate decorations on their heavy bronze torches. These were hollowed out at the top and stuffed with inflammable oil-soaked rags.



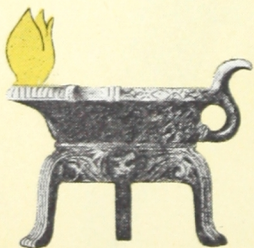
BETHLEHEM

A SILVERY finger of Holy light traces its way across the heavens to pause over Bethlehem, where Christ is born of the Virgin Mary in an humble manger. The inn nearby is hushed in the awesome light.

Wise men from the distant hills, high priests of Ahura Mazda, come to give thanks and to bestow worldly gifts upon the infant child who lies bathed in heavenly light in the arms of Mary, the Mother. The meager light from the oil-filled lamp is lost in Holy brilliance. Its flame flickers and sputters in the gusty drafts of the lowly manger.

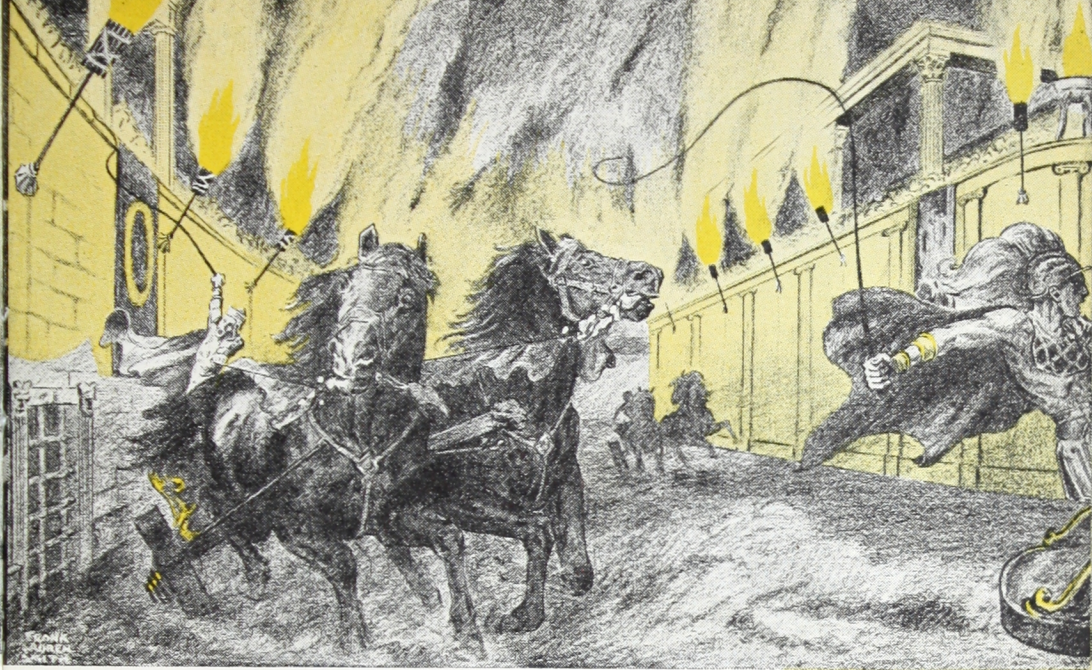
The three wise men look upon the Christ child in awed thanksgiving. A Saviour is born! A Saviour to light the world with truth and goodness, even as a thousand candles would bathe the humble manger in brilliance! Their voices are hushed; life itself seems to pause in holy wonder; a strange, beautiful music fills the air.

Mary, holiest of mothers, smiles in reverent happiness that the Power should choose her to bear the King of Kings. The lamp at her feet burns more brilliantly, as if inspired by the holy scene. The wise men bow and prepare to depart, to spread the glad tidings that a Saviour has been born. They pause in the doorway to look again upon the smiling face of the Christ child. The lamp flame blinks and nods, and the wise men go their various ways to spread the Light over a darkened world.



ROMAN LAMP

The ornamentation and design shown on this Roman lamp, dating from the time of Christ, reflect the influence of Greek and Egyptian art. Olive oil was generally burned and fabric wicks were used. The tripod standard is separate.



MIGHTY ROME

HEAR! All you Roman lovers of sport! Today the chariots race in the Circus Maximus!

There is a fanfare of trumpets; a hoarse shout of joy, as gayly colored chariots roll into the broad arena. The *Agitatores*, behind their spirited horses, hold the taut reins in readiness.

Marcus Aurelius, in his imperial box, looks on with suppressed excitement. In his hand is the small white flag, or *mappa*, that signals the start of each *missus*. With a flourish he tosses the flag upon the track and the race is on!

Seven times around the broad arena each chariot flies in a cloud of dust. Determined, skilled slaves holding the reins fight to gain inches over their adversaries with a deftness that brings fresh cheers from the excited crowds.

Dusk steals into the arena. The hour grows late. Aurelius raises a jeweled hand toward the waiting slaves. The torches! Faint gleams of light pierce the gathering darkness. Giant torches, made of bundles of oil-soaked faggots and placed along the course at strategic points are ignited.

Again the chariots start their mad race, the firelight gleaming on the sweating flanks of the horses. Darkness falls, and the torches are swallowed in the night. They smoke and sputter and slowly die, but their smoldering light lengthened man's day from the sunset through the darkening hours.



ROMAN
TORCH

In Roman times giant wooden torches were used for outdoor lighting. They were made of bundles of oil-soaked sticks tied together with strips of metal or wire and fastened to a long pole; a bonfire on the end of a rod.



THE RENAISSANCE

SEPTEMBER 6th, 1434. The night is dark. An imposing carriage rumbles through the silent streets of Florence. Cosimo d'Medici, exiled a year before, returns to power!

Past the darkened mansions of his enemies, the Albizzi, his magnificent carriage rolls. Just twelve months before, the same Albizzi had overthrown the power of the mighty house of d'Medici, the self-appointed rulers of Florence.

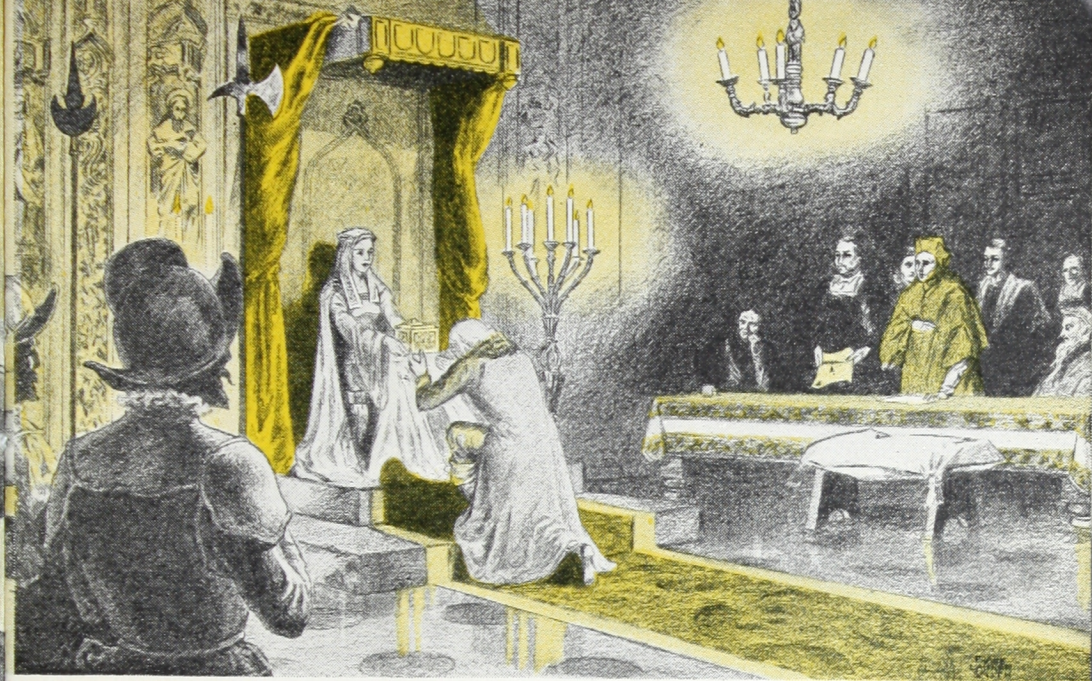
After a year of tribulation, Florence cried again for the strong rule of the d'Medici. Cosimo smiled with satisfaction as the carriage rolled up to the welcoming gates of his own palace. The cressets on each side of the gate blazed with a warm welcome. Mighty they are, these giant lanterns of iron, with flaming faggots of wood snapping and crackling in the still night. Mighty, like the iron power of the d'Medici!

Cosimo stepped once more inside his gates and gazed with approval at familiar shadows in the darkness. Home again! This time there would be no lost power! He would make the name of d'Medici synonymous with Florence. Art and beauty would flourish! The people would grow again . . . grow to know the d'Medici as masters of all Florence!

The years passed. Cosimo made good his silent vow. For three hundred years the d'Medici reigned in Florence, bringing art and beauty, and modern political methods, into the darkened world.

STROZZI LANTERN

This is a development of the ancient fire basket. Burning pieces of wood were thrown into the basket-like container.



CHRISTOPHER COLUMBUS

AT LAST! The day had come.

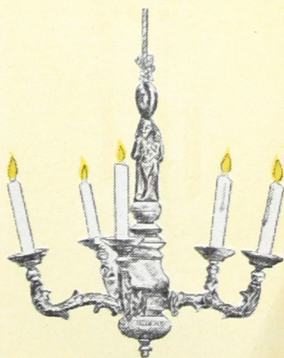
Christopher Columbus, a mariner, who but twenty years before had been cast upon the shore of Portugal on the wreckage of an ill-fated privateer, was to have an audience with the queen. Queen Isabella of Spain would believe with him that the world was round, though others laughed with scorn.

Before the beautiful Isabella he kneeled in gratitude, the light from the candle chandelier overhead casting flickering shadows on his bended back. From her stately throne, Isabella looked down upon the greatest of mariners with hope and intuitive confidence in his ability to find a new road to the riches of the East by the way of the dark waters to the west.

The candle light at her side etched soft grace in her regal beauty. She smiled, and bade him God-speed on his voyage.

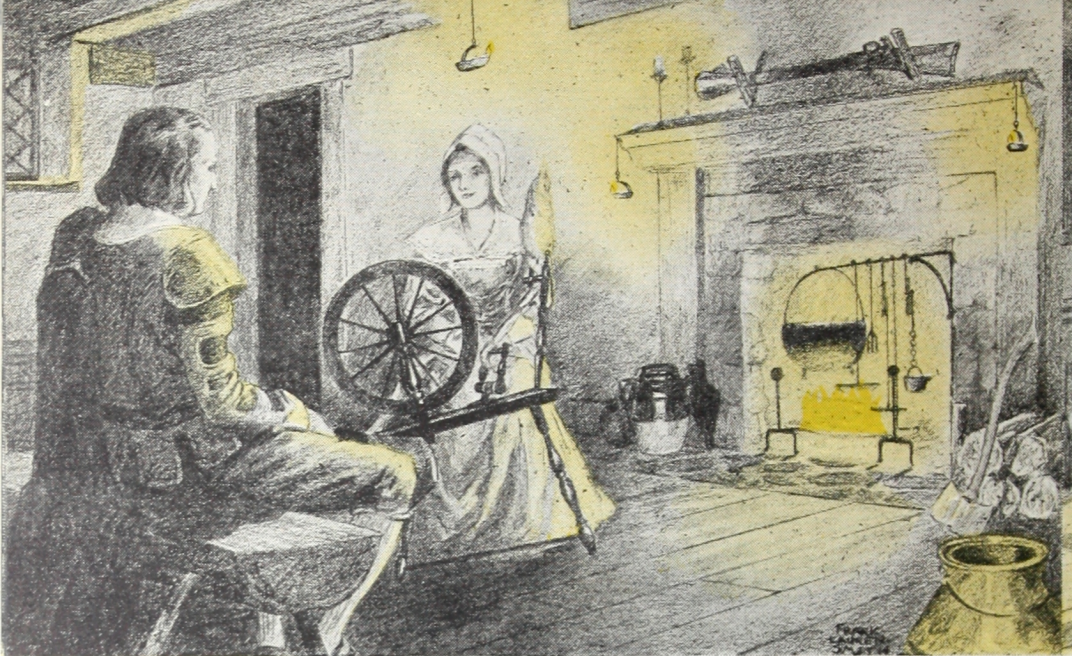
For months he journeyed over waters that had no end. An angry crew of desperados . . . men from the dungeons of Old World prisons . . . threatened and condemned him. In the blended pitch darkness of sea and sky, they plotted against him.

From the forward deck came a hoarse, excited cry: "A light! A light! Land!" In the strange, unknown darkness that was always ahead, a light from San Salvador arose . . . land! A new land . . . unknown . . . unwanted . . . destined to lead the world from darkness into light



PRICKET
CHANDELIER

An iron chandelier with a figure of the Virgin in the center. Mutton fat candles were forced over spikes that protruded from each candle holder.



THE PURITANS

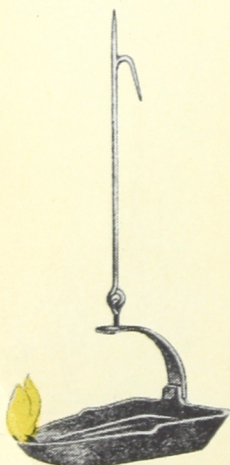
A GUSTY November wind whipped the early snow viciously against the crude log cabins that dotted the New England shore at Plymouth. Phantom wisps of smoke from squat chimneys were quickly lost in ominous grey skies.

In a cabin far up the hillside sat a man and a maid; John Alden, staunch friend of the mighty Captain Standish, and Priscilla Mullens, fairest maiden in all Plymouth, who worked swiftly at her spinning wheel. The meager light of a sputtering "Betty" lamp outlined her fair beauty. The sodden wick dripped odorous oil upon the rough-hewn floor of the cabin.

John sat uneasily on the edge of a crude bench, twisting his hat brim in nervous indecision. He cleared his throat awkwardly and opened his mouth to speak. Words came in a tremulous falsetto: "Miles Standish . . ."

A look of perplexed disappointment crossed the shadowed face of the maid of Plymouth. She worked more furiously as John pleaded the case of Captain Standish. The wheel hummed in harmony with the droning wind. John's oratory became more vibrant, more eloquent.

The thread snapped; Priscilla sighed and bowed her head. The flush on her fair face deepened and her voice came in a frightened, impulsive whisper: "Why don't you speak for yourself, John?"



BETTY LAMP

The name is derived from the German word "besser," meaning "better." It was an improvement over earlier lamps because of the addition of a slot in which the wick lay. Rank-smelling fish oil was generally burned.



LOUIS XIV

FRANCE was once more at peace with the world. The treaty of Utrecht had been signed and the soldiers were coming home. Home! Even in those jaded years the word brought a thrill of happiness.

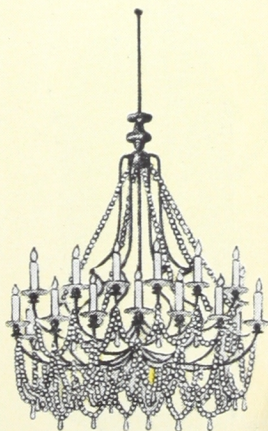
King Louis XIV, surnamed "The Great," still ruled over France with pomp and ceremony. "A ball," he commanded, and the halls were festooned for a gala home-coming.

Beauty beyond measure . . . extravagant beauty that shone from the giant, sparkling chandeliers, bedecked with lighted candles and tinkling crystal drops . . . that peered coyly from beneath the shadowed lashes of silken-gowned ladies.

The crowds still came; gay music filled the halls. In secluded corners whispering men gave birth to new intrigues and plots . . . gay women laughed merrily as they danced.

A regal fanfare of trumpets. The King! Slowly, with majestic step, the feeble old ruler paced through the lane of curtsying ladies and bowing men to his place at the head of the hall. Once more the singing strings of the orchestras were heard through the candle-lit palace . . . the tinkling laughter of the ladies and the sparkle of crystal chandeliers filled the great salon, and the party continued.

The gay laughter still echoes through the halls of time . . . and the delicate, sparkling chandelier of Louis' era still graces many homes today.



CRYSTAL
CHANDELIER

The crystals reflected light from the candles held in the cups that replaced the old spikes or prickets. Wax candles were used, making light an expensive luxury. In many homes, crystal chandeliers are still in use today.



REVOLUTIONARY WAR

NEAR to midnight. The new world slept in silent darkness . . . a restless sleep, for the threat of war was at the threshold.

Across the river from Boston, outlawed city of New England, a nervous young silversmith paced beside his saddled horse . . . waiting. Impatiently he stamped his booted feet and peered through the darkness toward a ghost-like church steeple that stood silhouetted upon a far hill. Suddenly he started . . . a light! High up in the darkened tower a flickering, feeble light appeared. The British come by land! . . . but wait! Another light beside the first! The British come by sea!

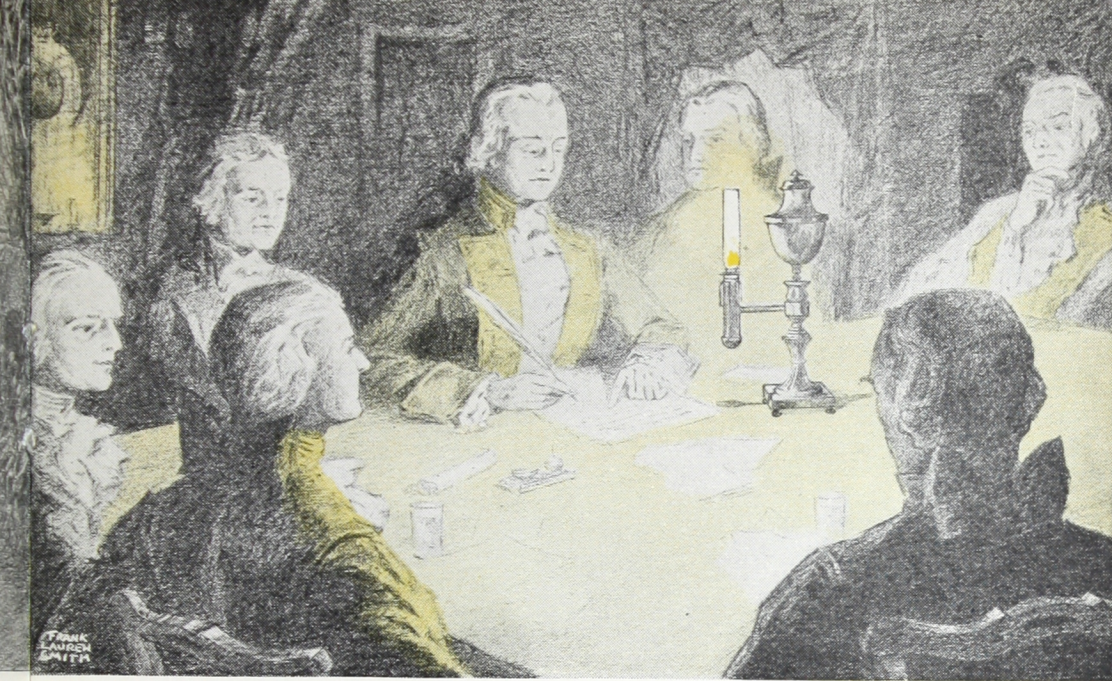
Setting his face grimly, Paul Revere mounted and spurred his waiting horse. Through countryside and village he rode, shouting his warning . . . "The British are coming!" His small candle lantern waved madly in the night, the slits in its metal sides etching strange patterns in the darkness. Sleepy-eyed patriots rushed to doors and windows to hear the cry. The British! Candles gleamed faintly in darkened windows as Minutemen dressed and loaded heavy muskets with powder and ball to greet the Redcoats.

The next morning at Lexington and Concord, the shots were fired that were heard 'round the world. The minutemen were ready! Those lanterns in the Old North Church lit the way to liberty; a new nation, born in that feeble light, was destined to endure.



PAUL REVERE

This Revere Lantern is made of punched iron with a hinged door through which a candle or small oil vessel could be inserted. Other Revere lamps had scraped bone or glass sides.



THE NEW COUNTRY

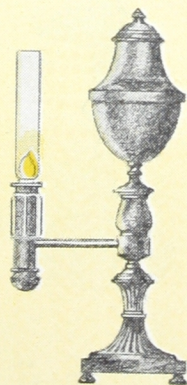
ON THE mantelpiece above the dead embers of a forgotten fire, a clock ticked away the hours . . . paused, and struck three times.

The slouching figures grouped around a table in the center of the room straightened and moved restlessly in their chairs. George Washington, patriot and President, pushed aside the papers on the table before him and smiled wearily at his colleagues. Their voices reached a high pitch of finality as they prepared to leave. Hamilton and Jefferson, both young and vigorous, paced the floor in animated discussion.

Another meeting of the President's first "cabinet"; a solemn group of loyal patriots who, night after night, joined together at Washington's home to build a bulwark of security for the new nation.

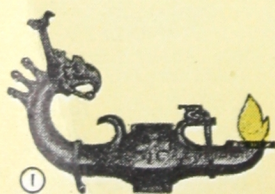
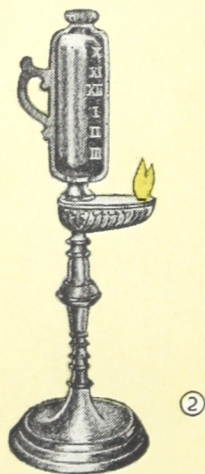
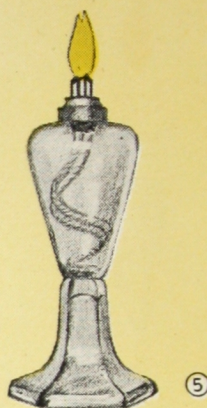
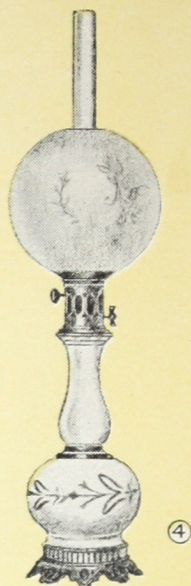
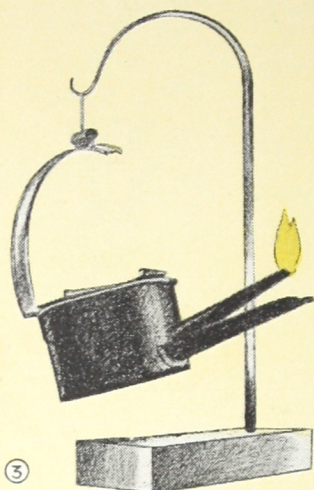
The President arose, and with movements that bespoke his age, lifted the brightly glowing Argand lamp from its place upon the table and started for the door. His weary colleagues followed, some stifling tired yawns; others still discussing some troublesome affair of state.

Through the dark, quiet night outside, their voices came back in muffled tones as Washington stood wrapped in profound thought in the open doorway of his quiet house. In the nearing dawn he envisioned peace and contentment for a happy people.



ARGAND LAMP

The Argand Lamp invented in 1787 A.D. produced a revolution in illumination. It replaced the open flame with a round wick and chimney, giving passage to a double current of air.



1. An early Roman bronze lamp similar to those used by the ancient Greeks, but more ornately decorated. Each figure carved on Roman hand lamps had some particular significance. Olive oil was the illuminant used in all Mediterranean countries.

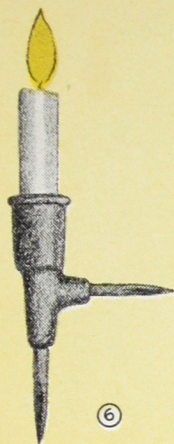
2. An oil lamp of German design that marked the hours. The glass reservoir was graded to measure the oil as it was burned. Although not reliably accurate, it was an innovation for the seventeenth century.

3. A Flemish lamp of a type used during the Middle Ages, adapted for burning heavy oils and fats. Heat from the flame melted the fat; the lower spout caught the unburned oil. The lamp was hooked to a stand for use on the table.

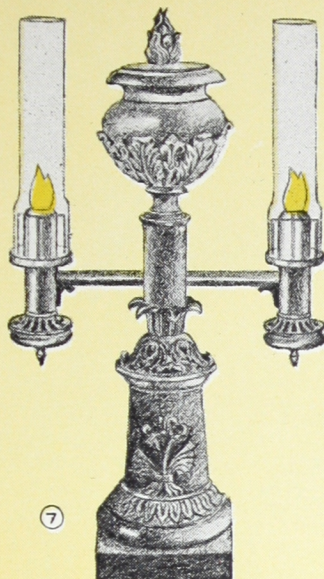
4. In 1800 Carcel made an important modification of the Argand lamp. The oil reservoir is placed in the base and the oil is raised by means of a clock-work which operates two small pumps in giving a regular feed of oil to the wick.

5. Whale oil lamp of 1840. Whale oil was the common lamp fuel used in the United States from early Colonial times until the introduction of kerosene. Many of the first American fortunes were built upon the sale of this fuel.

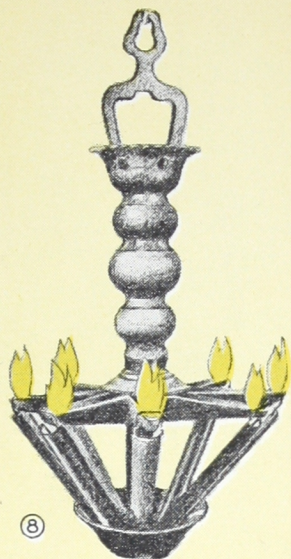
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OLD LAMP

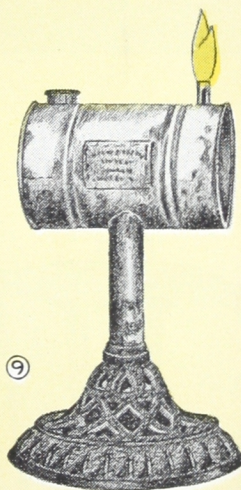
6. A candle holder known as a "Sticking Tommy," used by the Gloucester fishermen about 1860. The spikes on the side and the bottom permitted sticking the candle in an upright position on a table or in the side wall.

7. The double bronze Argand lamp, invented in 1787 A.D. Its invention was more of an accidental discovery. While heating a bottle over a flame, the bottom cracked off and the hollow chimney dropped over the flame. The light steadied! The first light improvement in 4,000 years!

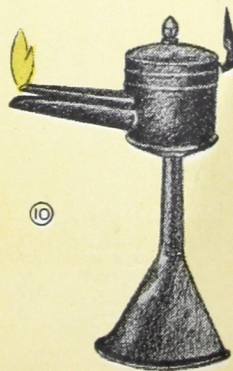
8. A typical ingenious multi-wick, open-flame oil lamp made of metal. This lamp was suspended from the ceiling. Each wick lay in its own "trough," and the drippings were caught in the shutes that carried it to a reservoir at the bottom.

9. The Kinnear Patent Lard Oil Lamp (1851), designed to give more light than a single candle. The lamp, which resembles a tin can, has a heavy base. The wick is inserted in the burner tube in one end. The filling cap is at the other end.

10. An improved Flemish lamp, still employing the two-spout principle. Fats and greases were still used as an illuminant. The major improvement is the covered reservoir, which prevented spilling.



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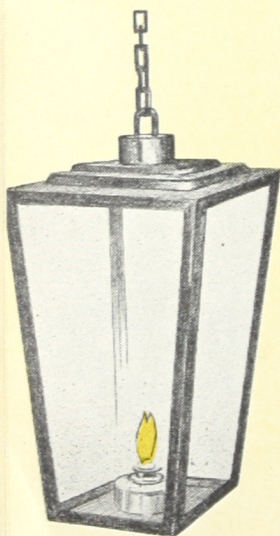
CIVIL WAR

GAY music floated through the moonlit southern night. Gay music and the hum of many voices. Down in the drowsy, moon-drenched darky hollow, an aged mammy softly crooned to a sleeping child. The gay sounds from the lighted manor house high upon the hill did not fill her with cheer. In it she could hear the rattle of sheathed sabers and the heavy stomp of military boots.

On the softly lit veranda, men in the grey of the Confederacy danced with dark-eyed Southern belles dressed in yards of silk and lace, sweet as the flowers that bloomed in silent beauty in the nearby garden. Overhead, square oil lanterns hung motionless, staring with their single eyes upon the sad mimicry below. Persistent night insects, attracted by the soft, mellow light, fluttered against the smudged glass panes in the sides of the lamps.

A torn and dusty messenger comes out of the night and approaches his anxious captain. A few whispered words, the face of the officer darkens and the bearer of tidings vanishes again into the night.

The music from within stops discordantly. The officer speaks to other grey-clad figures in rapid, muffled tones. With frozen, worried smiles they turn to the apprehensive ladies. "We must go." With strained "good-byes" and last, loving glances, the soldiers hurriedly leave the gaily festooned home of hospitality, where bravely smiling ladies sadly wait for their return.



PORCH LANTERN

A product of early American industry. This severely designed lantern with glass sides held a small kerosene lamp with a wick that could be turned up or down with a ratchet wheel.



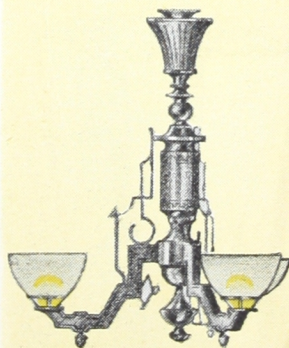
VICTORIAN PERIOD

BUSTLES and buskins and petticoats and pink-ribboned bonnets . . . the age when our grandmothers enjoyed afternoon drives in polished victorias behind brisk trotting horses. Invention, discovery and breath-taking advancement filled the new country with awe. It was an age of growth . . . an age when hissing gas flames lit the homes and the new "flaming water," or kerosene, was burned in shaded lamps.

In her old, familiar rocking chair, grandmother patiently sits at her knitting. The children have gone . . . out into a world that moves faster and faster . . . to carve their own names in the annals of time.

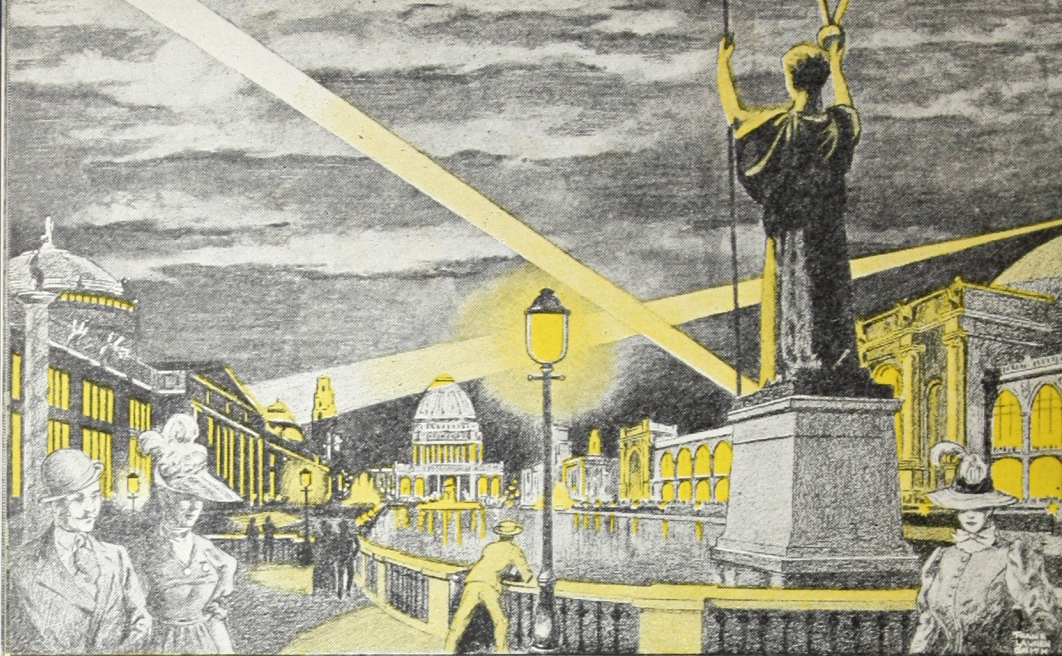
By her side, a kerosene lamp burns with odorous flame to give vision to her dimming eyes. A gas chandelier, stiff and unyielding, hangs from the ceiling, casting a sallow light over the room. Its heavy crystal glass shades stand in shining glory like frosted goblets around spurting flames. The light shows but dimly the far corner of the room, where hangs the old saber her husband had worn in the days of the Civil War. His portrait, that of a man with flowing sideburns and a flourishing mustache, looks down from its accustomed place high on the flowery-papered wall.

The old gives place to the new. Outside, an awakening world is speeding on to greater things, while here in her old rocking chair grandmother dreams of things long past; of the days of candlelight and spinning wheels.



GAS CHANDELIER

Dominating an entire room, the heavy gas chandelier was ornately decorated. The fish-tail shaped flames were hidden behind globes of frosted glass.



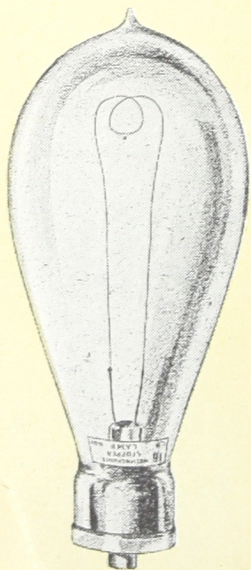
THE GAY NINETIES

MAY 1st, 1893. The soft scent of springtime was in the air. Over Chicago's grey, cobbled streets rumbled heavy drays, carrying strange burdens. On, beyond the close-knit city streets they clattered, to a fairyland of strange, silent buildings. Already a scurrying horde of men were busily preparing the great Columbian Exposition for the opening ceremony. The day would be bright and clear, and thousands of eager people would crowd the shore of Lake Michigan to see the wonders of this new world.

With all due pomp and ceremony, the Fair blared forth in riotous activity. The great American public marvelled at every new wonder that met their eyes. That fine new steam engine with glistening black sides; that strange new monster, the swiftly revolving dynamo from which came light!

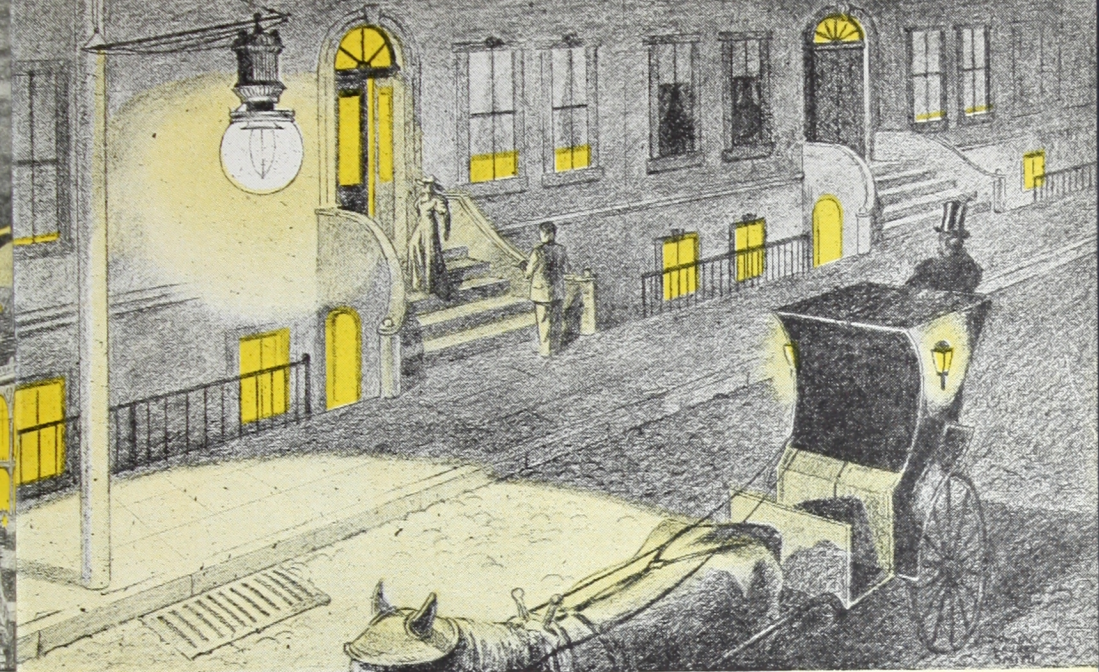
Darkness fell all too quickly. The wonders faded into the cold, grey dusk. A flash! Another! The lingering multitudes gasped in awed amazement. Beams of brilliant light played across the fairgrounds. Electricity! The wonders shone out anew, bathed with a brilliant yellow light from 20,000 carbon filament stopper lamps . . . the true marvel of the ages!

But ten years before, the first practical electric light had been invented. Now, with giant strides, science had advanced to cover the world with light . . . for the Columbian Exposition was but the beginning. Man found electric daylight in the darkness,



STOPPER LAMP

The carbon filament incandescent lamp perfected by Thomas Edison in 1879 led to many new developments. The Stopper Lamp shown above was developed by George Westinghouse and used to light the World's Fair in 1893.



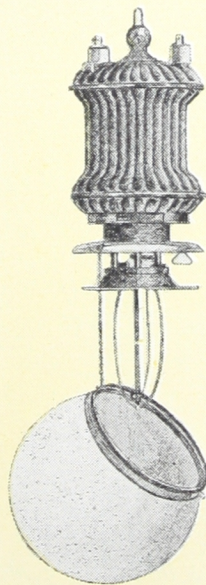
TWENTIETH CENTURY

THE world changes, and man changes with it. With the birth of a new century, brilliant splurges of piercing electric light illuminate the darkened streets where little more than a century ago, the British ordered every seventh house to display a light to keep the streets safe for late travellers. High on tree-like poles, great arc lights hang suspended in the night, their light a blaze of revealing brightness, driving back the shadows of night.

In hansom cabs with drivers decked in high silk hats, pleasure-seekers clattered over cobbled, brightly lighted streets to a new, exciting night life.

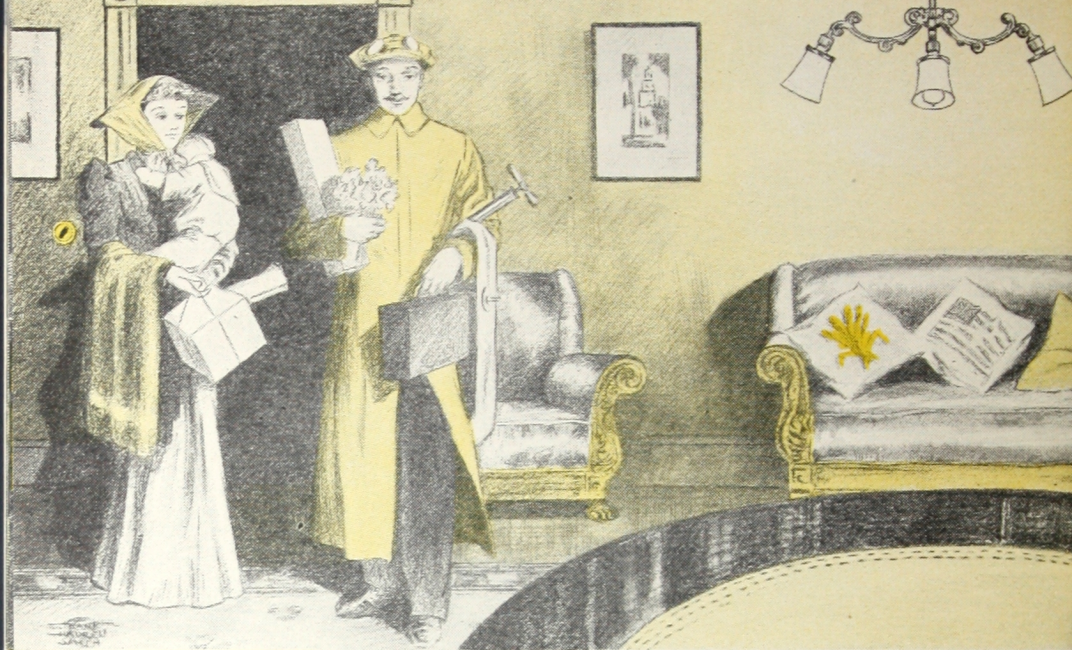
They pass the brownstone houses, row upon row, where an occasional late light shines through drawn shades; in one is a student hard at work with papers scattered on a table bathed in light before him; in another, someone deep in the pages of the latest novel . . . all pursue their tasks or pleasures with the friendly aid of light. On a lighted stoop, a young blade lingers over a fond good night, while the tight-waisted young lady sighs and fumbles blindly in her purse for an elusive key.

On down the quiet street, lighted by patches of electric brilliance, the hansom cab clatters, the antiquated kerosene lamps protruding like ears on either side, blinking uncertainly with each lumbering jolt. Gone are the terrors of night travel through shadowed city streets. Electricity lights the way to safety.



STREET ARC

These carbon arc lights provided the first high-intensity street lights in the United States. The first installation was made in Cleveland in 1879.



PRE-WAR PERIOD

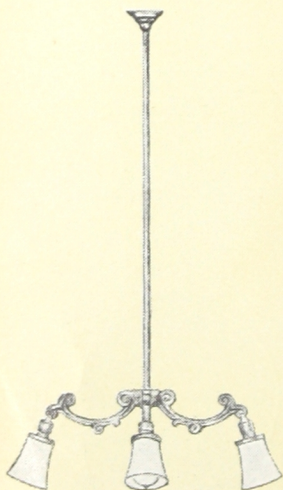
WITH a blinding flash, light flooded the darkened room. Two dusty figures, shrouded in goggles and shawls and dusters, stood blinking in the brilliant light. A sigh escaped the lips of a worn and tired woman. Home . . . at last!

With a shrug of finality, she thrust a sleepy-eyed boy in a nearby chair and dropped the blankets and bags and boxes that filled her arms. Home again . . . after a dusty, jolting adventurous ride over miles of unexplored countryside.

The man at her side removed his greasy duster and smiled sheepishly at his wife. What a day! Perfect, except for a breakdown and two flat tires . . . and that thundershower! The sputtering roar of his laboring motor still hummed in his dust-filled ears.

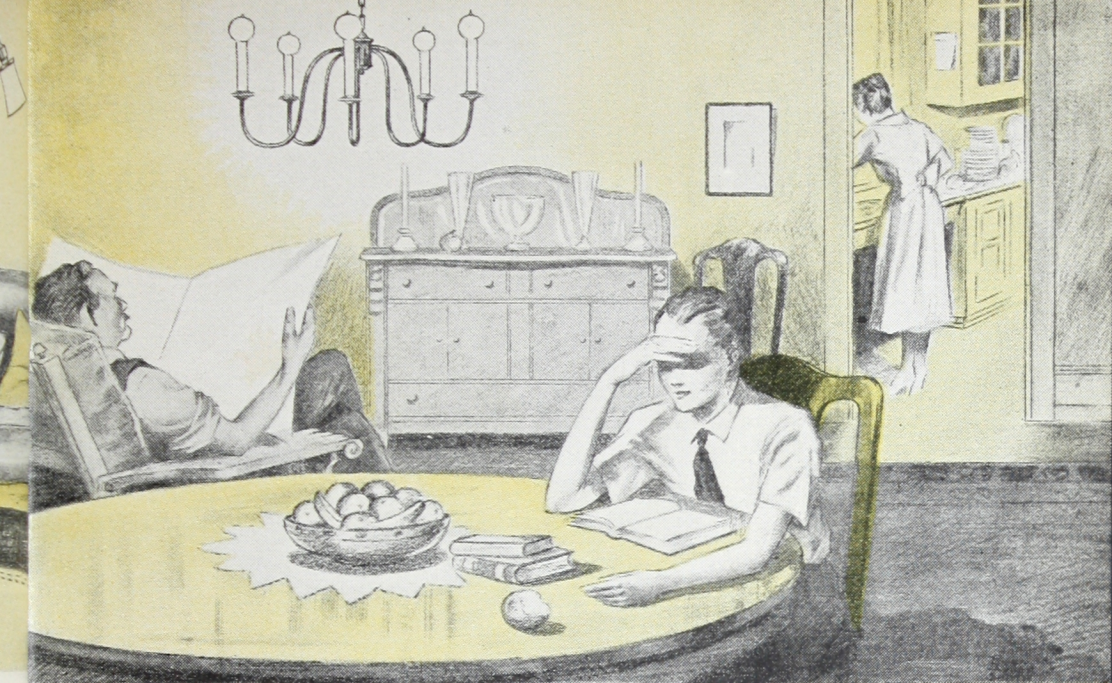
Already the world accepted the automobile and the marvels of electricity as a part of everyday life. No longer the smoking lamps and the hunt for an elusive match or spark. Electricity! The world was alive with it! Mam's day no longer ceased with the sunset. The darkened hours were turned to day with a magical brilliant radiance.

New labor-saving devices, powered by electricity, were making their appearance. Slowly but surely electricity began to lift from the shoulders of mankind some of the tiresome toil and drudgery which up to now was his heritage.



OLD GAS FIXTURE
CONVERTED TO
ELECTRICITY

In this period many of the old gas fixtures were converted to electricity. Lamps were clear glass with straight filaments. Drawn tungsten filaments were introduced in 1911.



POST-WAR PERIOD

OUT OF the ashes of the great World War rose a new world. War-weary soldiers returned to their homes to build again for happiness and security.

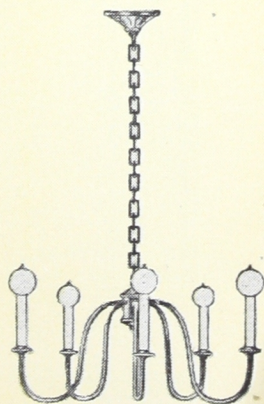
The discordant blare of raucous automobile horns became louder and louder as newer, more efficient cars sped along smooth highways. Buildings reached for the sky overnight. It was truly an age of growth.

In the home, electric lighting became an accepted fact. No longer was it ranked as a luxury; every workman enjoyed the convenience of a brilliantly lighted home.

Glaring globes of bright white light hung pendant-like from every ceiling. Lamps with heavy silken shades cast circles of intense light on the floor. Shadowed corners seemed to crouch in fear of the blinding light.

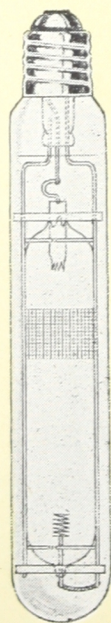
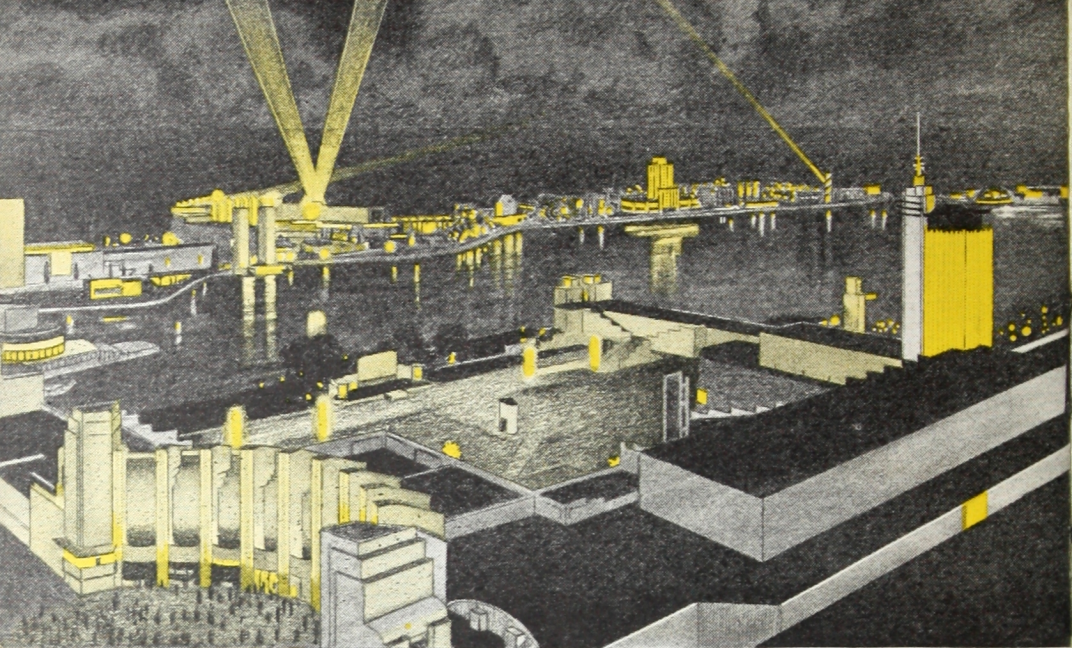
School children, hard at work at their evening studies, frowned painfully as the brightness pierced their young eyes. Helplessly they shielded their vision with a nervous hand as the pages dazzled their light-weary eyes.

The age of glare . . . before the world knew the dangers of harmful light. Even today, while many enjoy the improvements of modern lighting, some still suffer with blinding light in homes poorly illuminated by old-fashioned fixtures.



EARLY ELECTRIC LIGHTING FIXTURE

During this period the more decorative round bulb replaced the old straight side clear lamp and the outside frosted finish became very popular.



HIGH INTENSITY MERCURY VAPOR

The high intensity mercury vapor lamp is one of the latest developments in the science of illumination. These lamps were used extensively at the Century of Progress Exposition.

A CENTURY OF PROGRESS

ONE hundred years, in the annals of time, is but a page in the history of man. But that page, like none before it, is filled with awesome marvels . . . great discoveries, inventions . . . man-made advancements beyond compare.

A Century of Progress, in Chicago, brought to the eyes of the world the fruits of ten decades of advancement. Marvels that the mind cannot fully grasp. Wonders that will take another century to fully develop and perfect, so great are they in scope.

Light played a major part in this pageant of progress. From the star Arcturus, 40,000,000,000,000 miles away, light that started on its swift journey to earth when the world-famous Columbian Exposition was in progress, formed the contact that flooded the World's Fair with a riot of light and color never before envisaged by man.

The efforts of the past prophesied the future. Light from mysterious, hidden sources that played upon colorful buildings, changing at will the shades and tones of light. Great beams of light that made of the heavens a giant rainbow . . . man's science surpassing the artistry of the elements.

As forty years before at the unforgettable Columbian Exposition, lighting scientists again astounded the world with strange wonders of illumination. Fantastic dreams of a future with an abundance of light have come a little closer to realization.



TODAY'S BUSINESS

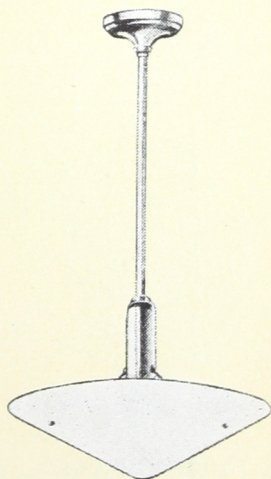
THE clatter of typewriters; the jangle of telephones. Action! Speed! Efficiency! American business forges ahead . . . advancing with the 30's.

One hundred years, a sand in the desert of time, marked untold advancement in the science of lighting. The gas of our grandfathers . . . kerosene. The student lamp . . . Pintsch gas. A multitude of advancements, filled with promises of betterment . . . and then electricity!

Fifty years ago the incandescent filament electric lamp was born. Today we accept it as a natural part of our lives. Our homes and our offices are lighted with it. The world blazes with it.

Business men are beginning to realize that lighting can have a very decided effect upon the personnel of their organizations. Tests have been made which prove that employees work faster, make fewer errors and feel better when they work under good light.

As a result, business men are modernizing their lighting. The old, unshaded lamps are banished. New, indirect lights that spread shadowless light over the entire office are being installed. Business keeps pace with scientific lighting advances.



MODERN COMMERCIAL LIGHTING
FIXTURE

In the modern business office an abundance of soft, well diffused light is provided by attractive fixtures equipped with high wattage Mazda lamps.



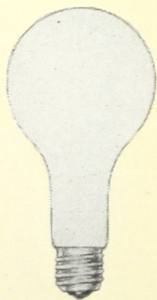
TODAY'S LIGHTING

SCIENCE moves onward with ever-quickenings step to give the world better light. The modern home shines out in the darkness, a symbol of comfort and security. The soft glow from many windows invites us into well lighted homes, where every thought is given to comfort, convenience and safety.

A beacon shines from the broad front door to light our way up the steps. Hallways glow with an even light to assure safe footing. The lighting in each room does its appointed task quietly and effectively with the flick of a switch . . . that little movement that replaces the wearisome task of trimming wicks and cleaning chimneys; striking flints and drawing odorous fish oil from heavy containers.

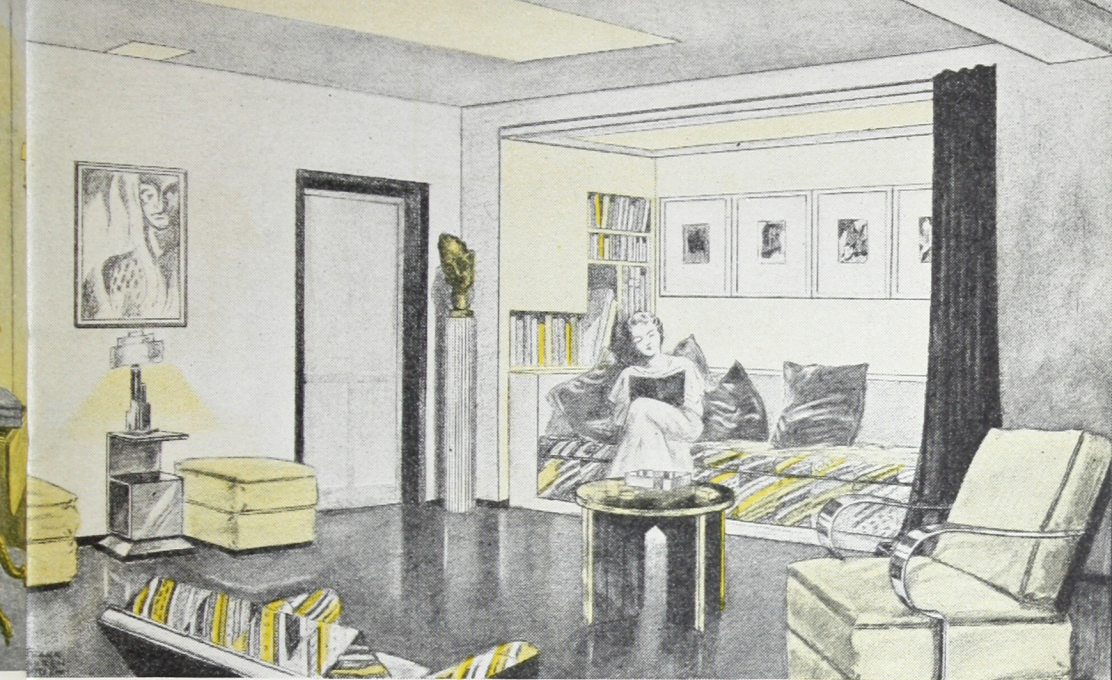
In the bright and cheerful living room, the lighting is used for decorative purposes as well as to provide for easy vision. The strong, steady glow from indirect lamps reflecting from the ceiling, gives perfect vision. Gone are the harsh lights that brought poor sight. Each socket is equipped with a Mazda lamp of the proper wattage. Science has kept pace with Art in furnishing a lamp to fit each need.

We look back, now, a few years, when we suffered the tortures of the Eye-strain Zones . . . those patches of piercing brightness alternated with somber gloom that made our eyes burn and our heads ache.



MODERN MAZDA LAMPS

Today, Mazda lamps represent the latest advances in the art and science of illumination. They provide illumination which is restful to the eyes, attractive to the decorative scheme and economical to use.



IN THE MODERN HOME

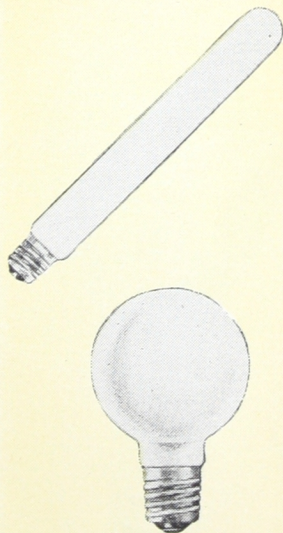
INVENTION and ever-advancing science have given leisure to the average man. Time to think and plan for the future . . . time to study the wisdom of others under conditions that are favorable to mind and body.

Modern lighting *makes* those conditions favorable. No longer are mind and body made tired by ineffective lighting. A knowledge of the advantages of better light has made this a happier, safer, and more healthful place in which to live, and work and play.

Man's hours of play reach far into the night . . . with the same easy vision that comes with the natural light of day. Life is longer, living more pleasant with the new miracles of modern light.

Many of the poorer homes in this country today are equipped with electricity that gives the brightness of a thousand candles . . . a king's ransom in light . . . a gift of science that knows no equal.

Proper lighting is a science in itself, born of the days when light from unshaded bulbs threatened our vision. It is a science that can be known to everyone . . . that *must* be known to insure good vision. Glare, that destroying evil of former days, is rapidly being eliminated. Modern lighting reaches out to give to the world the best of this Modern Miracle . . . light that *aids* sight.



TUBULAR AND
3-LITE MAZDA
LAMPS

Modern lighting effects are gained through the use of tubular and three-light Mazda lamps. The three-light lamp is a dual filament lamp from which three intensities of illumination can be obtained.



MODERN MERCHANDISING

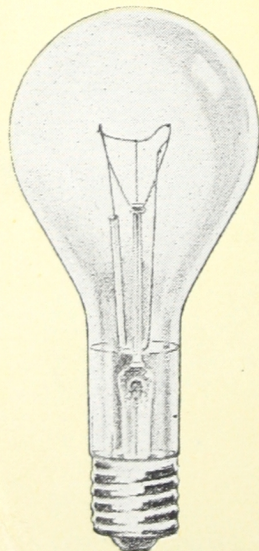
A NEW day is born! One hears of Better Light for Better Sight. Productive labor is crowded into a few hours, and keen competition calls for the scrapping of old ways and old tools.

The modern merchant, constantly searching to increase the efficiency of his store, has quickly learned that the intelligent use of proper lighting does much to increase sales. Comfortable lighting from indirect sources, casting an even, unglaring glow over counters and merchandise, is restful to the customer . . . and a rested customer is in a better mood for buying.

Today the architect and illuminating engineer join hands to create new, more efficient lighting in the store, office and home. The hanging chandelier gives way to luminous panels, concealed coves, moulded glass, structural shapes, shaded sources of brightness kind to the eyes. Light as an *aid* to better business has gained well-earned recognition.

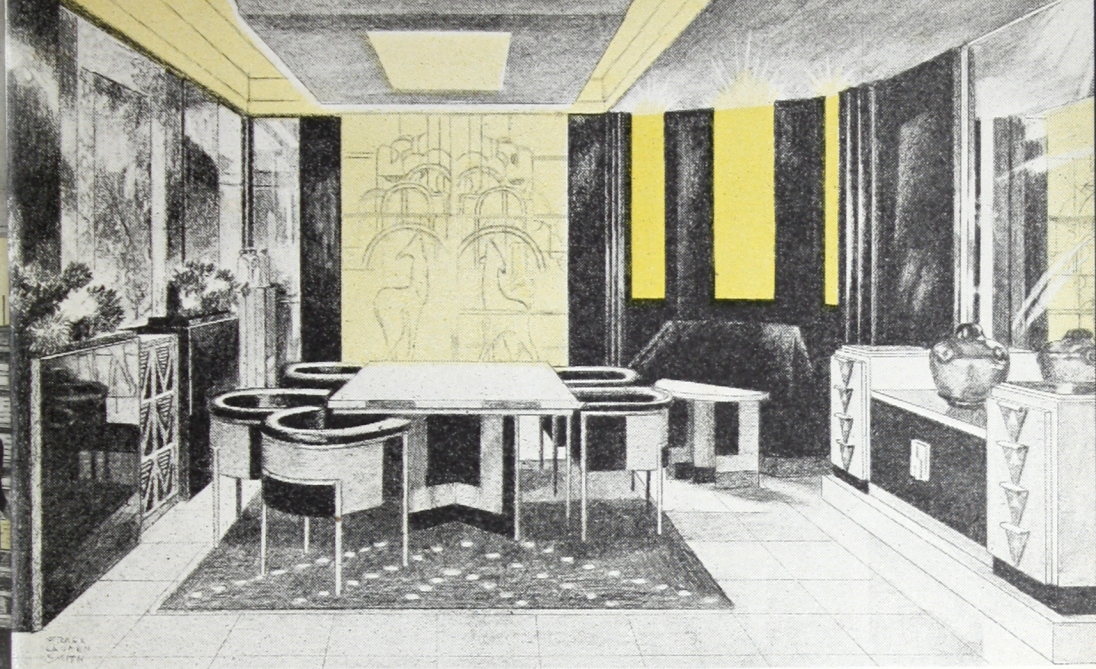
Thus modern illumination . . . scientific, artistic, economical, comfortable . . . has become everybody's business! A necessity for better living in this world of new ideas.

Business succeeds with new methods by taking advantage of every advancement that leads to better efficiency. Standing, with a backward glance at light and civilization, one may well marvel at the wonders that have been wrought and feel awe for what the future holds.



HIGH WATTAGE
MAZDA LAMP

Stores of today rely upon light to show merchandise in its true color, texture and form. Here high wattage Mazda lamps are employed.



LIGHTING FOR TOMORROW

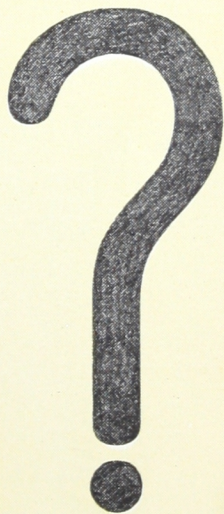
THIS half-seeing, half-lighted world promises the man of tomorrow rich treasures of softly glowing masses of tinted radiation. Hints from the research laboratories tell of strange lamp shapes and bottles of luminous vapors, weird in their magical powers. Many of tomorrow's light sources will assume the form of colored masses of metallic vapors, radiating each its own peculiar quality of light and each fitted to the seeing needs of some particular task or some particular preference.

Moonlight and dawn; golden noon or a cool northern sky; crimson sunsets . . . all are lighting effects which will soon be at man's command to beautify his home.

Today a dollar buys fifteen times as much light as it did twenty years ago, and the future promises still further gains in lighting efficiency.

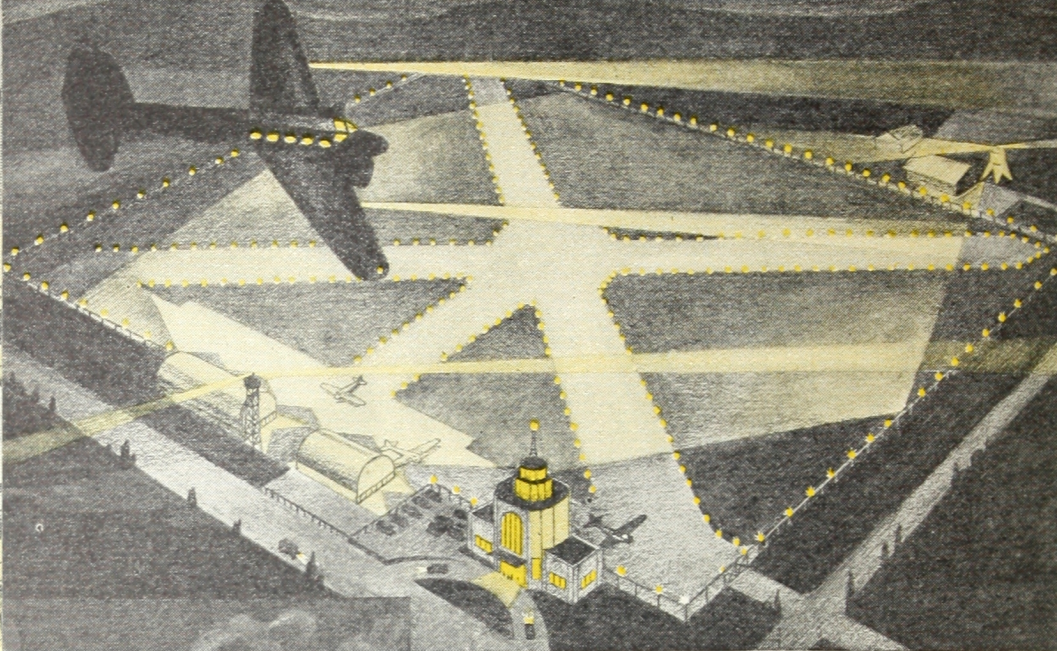
The home of tomorrow, a galaxy of light and color, will be lighted at a cost less than that expended but a century ago for crude candles to feebly illuminate one small cabin.

Light is indeed the symbol of progress. It has illuminated the roadway over which mankind has traveled from the dark stumbling paths of the past to the highway of the future.



A QUESTION

Lighting for tomorrow is a question with many answers, all of which may soon become realities. From scientific laboratories will come new developments which will make the future brighter than the past.

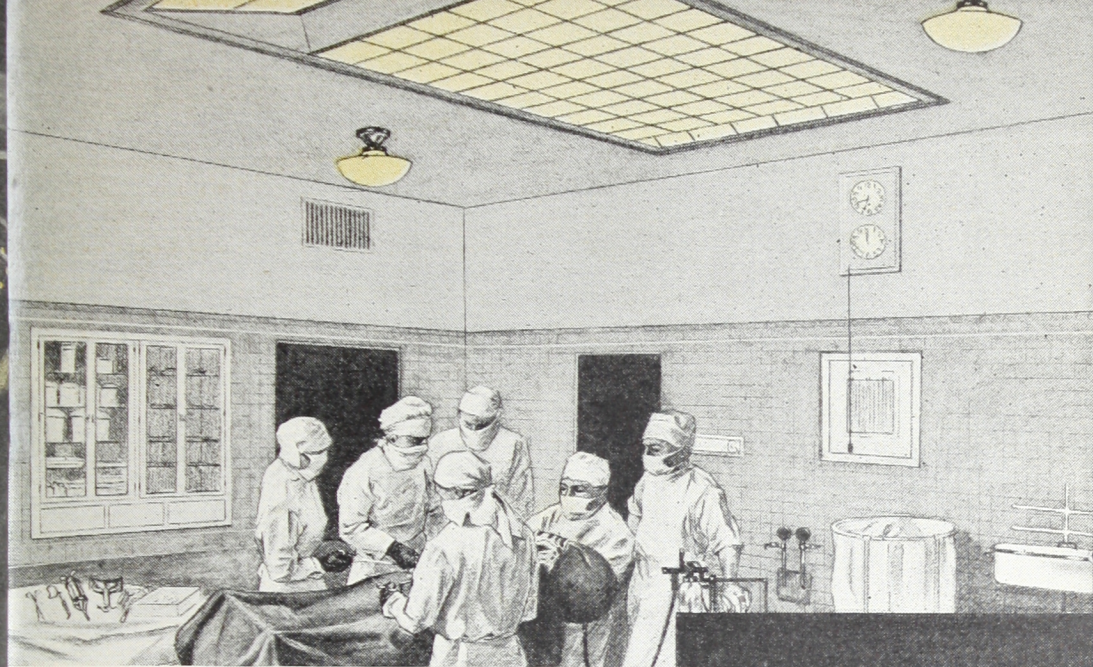


MODERN WONDERS OF

THROUGH the silent darkness of the night a huge black bird races high above a sleeping countryside. Suddenly, below, a blinding flash of light turns the night into brightest day. An airport, with floodlights bathing a broad, smooth field, awakens to greet one of the great trans-continental transports as it swoops majestically to a landing . . . safe with the aid of light.

Over mountains, through valleys, past sleeping towns, a glistening silver streak speeds over shining rails. Like a gliding serpent, the racing train flashes around banked curves, a powerful headlight cutting a swath of light in the darkness. An alert engineer at the controls of the racing, streamlined train knows that lives depend upon him . . . and upon the faithfulness of that white beacon and those colored signals that light the way before him.

On smooth-paved highways and country lanes, the motorist has learned to depend upon the unblinking eyes of his car . . . the headlights that guide him on his way as he speeds through the darkness. Light protects the watchful driver from hidden hazards that lurk in the shadows.



THE ELECTRIC LIGHT

BEHIND the scenes in our great hospitals, light plays an important part. In spotless operating rooms, huge overhead lighting units direct a flood of powerful white light upon the operating table, so that the surgeon can see clearly to perform his delicate task. In contrast to this huge lighting unit is the tiny lamp no larger than a grain of wheat. This lamp is used to make visual examination of various organs.

Her solemn sirens calling through the heavy fogs, a mammoth ship ploughs her way through darkened seas. An ocean liner, palatial city on the waves, heads straight and fast to a distant port. From bow to stern, a gleaming fairland of light . . . enough to illuminate an entire city. The perils of fog at sea are forgotten as merry voyagers dine and dance while light keeps guard outside.

In the strange and mysterious darkness far beneath the waves, a diving lamp casts a revealing glow over wonders never before seen by man. Strange fish and other inhabitants of the deep drift silently past, while an awkward form in a heavy diving suit holds his diving lamp before him as he explores in unknown depths. Even here, in man's new domain, light shows the way to greater accomplishment along the never ending road of progress.

